

What is claimed is:

1. A method for determining fluid chemistry of formation fluid in earth formation surrounding a borehole, the method comprising:
 - storing analytical reagent in a reagent container coupled to a fluids analyzer via a flow-line in a formation tester;
 - transporting the formation tester downhole;
 - drawing formation fluid into the flow-line;
 - moving a mixture of formation fluid and analytical reagent through a spectral analyzer cell in the fluids analyzer; and
 - performing reagent injection spectral analysis on the mixture.
2. A method according to claim 1, wherein performing reagent injection spectral analysis includes injecting reagent into formation fluid within the flow-line to create a mixture of formation fluid and reagent in the flow-line.
3. A method according to claim 2, wherein injecting reagent includes injecting reagent using a syringe pump.
4. A method according to claim 2, further comprising establishing and storing baseline optical density values for at least one wavelength prior to injecting reagent.
5. A method according to claim 2, wherein injecting reagent includes injecting a predetermined volume of reagent.
6. A method according to claim 5, further including adjusting the predetermined volume.
7. A method according to claim 6, wherein adjusting the predetermined volume includes adjusting an injection period of time.
8. A method according to claim 6, wherein adjusting the predetermined volume includes adjusting an injection pump rate.
9. A method according to claim 5, wherein injecting reagent includes injecting reagent into a stopped formation fluid.
10. A method according to claim 5, wherein injecting reagent includes injecting reagent into a flowing formation fluid.

11. A method according to claim 2, wherein injecting reagent includes injecting reagent using wellbore overpressure.
12. A method according to claim 11, wherein injecting reagent includes injecting reagent at a controlled rate using a restrictor.
13. A method according to claim 11, wherein injecting reagent includes injecting reagent at a controlled rate using a throttle valve.
14. A method according to claim 11, wherein injecting reagent includes injecting reagent for a controlled period of time.
15. A method according to claim 2, wherein injecting reagent includes extracting formation fluid from a stopped flow-line.
16. A method according to claim 15, wherein injecting reagent includes injecting a predetermined volume of reagent.
17. A method according to claim 16, further including adjusting the predetermined volume.
18. A method according to claim 17, wherein adjusting the predetermined volume includes setting an extraction pump rate.
19. A method according to claim 17, wherein adjusting the predetermined volume includes setting an extraction time.
20. A method according to claim 15, wherein extracting formation fluid includes using a syringe piston.
21. A method according to claim 15, wherein extracting formation fluid includes using a flow-line pump.
22. A method according to claim 15, wherein extracting formation fluid includes using a step piston.
23. A method according to claim 22, wherein extracting formation fluid includes adjusting metering valve settings.
24. A method according to claim 1, wherein storing reagent includes storing different reagents in first and auxiliary reagent containers.

25. A fluids analyzer for analyzing formation fluid in earth formation surrounding a borehole, comprising:
- a probe for receiving downhole formation fluid from earth formation;
 - a flow-line coupled to receive formation fluid downhole from said probe;
 - a reagent container in fluid communication with said flow-line;
 - spectral analyzer means, coupled to receive a mixture of formation fluid and reagent from said flow-line downhole, for analyzing said mixture to produce time-series optical density data at a plurality of wavelengths; and
 - computing means for determining a characteristic of formation fluid from said optical density data.
26. A fluids analyzer according to claim 25, wherein said reagent container is a syringe pump.
27. A fluids analyzer according to claim 25, wherein reagent in said reagent container is exposed to wellbore pressure.
28. A fluids analyzer according to claim 27, further comprising a syringe pump fluid container coupled to extract fluid from said flow-line.
29. A fluids analyzer according to claim 27, wherein said reagent container is coupled to said flow-line by a restrictor.
30. A fluids analyzer according to claim 27, wherein said reagent container is coupled to said flow-line by a throttle valve.
31. A fluids analyzer according to claim 27, further comprising a step piston coupled to extract fluid from said flow-line.
32. A fluids analyzer according to claim 31, further comprising a metering valve between said step piston and said flow-line.
33. A fluids analyzer according to claim 25, further comprising an auxiliary reagent container in communication with said flow-line independently of a first reagent container.